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VIEWS AND PERCEPTIONS OF TEACHERS IN SPECIAL EDUCATION IN GREECE REGARDING ICT

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Abstract:
There has been a lot of research about teachers' perceptions in special education (special educators) towards ICT use in mainstream schools demonstrating positive and negative standpoints. This survey the aims to find out special educators' views on ICT integration in mainstream schools in Thessaloniki. Objectives of the research are searching which types of ICT tools are used, what are the obstacles to ICT integration, and which are the benefits for students and special educators by the use of ICT. As the main aim of the present research is to explore the deep beliefs of special educators, qualitative method was used. The methodological tool used was the semi-structured interview which revealed a variety of aspects around ICT use. The sample consisted of fifteen participants all working at public mainstream schools in the area of Thessaloniki. Thematic analysis was used to analyze data and four themes related to study's objectives occurred: Advantages of ICT, Barriers that hinder ICT integration, Types and access to ICT tools and Obligation to use ICT. According to the findings of the research, the majority of the sample is positive towards utilizing technologies. Despite a range of ICT benefits described by the interviewees, significant obstacles hinder ICT integration. ICT could only be integrated efficiently if curriculum changes occurred.

Keywords: special education, ICT, perceptions, students with SEN

1. Introduction

According to Modern Pedagogy practices, the use of ICT can contribute to a creative and interactive learning process. More specifically, computers, which are the most common ICT tools used at schools, can be utilized to support the acquisition of knowledge by

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providing visual and audio material that makes the curriculum of the courses easily understood (Ojala, 2009). Other types of ICT that can be embed in educational process are PowerPoints, videos, wiki, and blogs. Even though they are not aimed at educational use, they can also make learning process enjoyable (McGarr & Kearney, 2009).

In general, the effectiveness of the Information and Communication Technologies (ICT) is obvious, as learning procedure has been facilitated (UNESCO, 2012). Educators have the opportunity to use different methods of teaching, such as student-centered rather than traditional ones, which motivate students participate in learning more actively and facilitate assessment. Students are no longer passive receivers of knowledge. On the contrary, they are active learners who can construct knowledge when given the proper stimuli and supportive tools (Moraru, Stoica & Popescu, 2011). ICT tools provide many chances to make learning interesting and enjoyable in terms of teaching in new interactive ways. Simulation of real phenomena provides a secure learning environment and lead to acquiring knowledge at the same time. Students' motivation is enhanced as ICT supplies an audiovisual environment that promotes learning by doing, interaction, team-working, discourse and cognitive conflict through understanding the causes and the results of particular situations (Ciccarelli, Straker, Mathiassen & Pollock, 2011).

Moreover, computer programs and software can be used more than once in order to accomplish learning through revision and construction new knowledge over previous knowledge. Critical thinking can be developed, as well, when students are guided efficiently by their educators. As ICT provides a multimodal environment of learning, all students regardless of their channel of intelligence and their learning style can learn effectively. Therefore, ICT can be a supportive educational tool not only for typically-developed students, but for nontypical ones, as well (Maida, 2015).

Many researchers have been exploring special educators believes about the correlation between the inclusion of students with educational needs (SEN) and the benefits of the use of ICT tools in classrooms (Katsarou, 2018). Mahbubur (2017) conducted a qualitative research which gives prominence to three teachers' perspectives on achieving the inclusion of blind students by using ICT in the classroom. All teachers agreed that before utilizing ICT tools, students used to read and write in Braille, which was time-consuming and eliminated the effectiveness of the learning procedure. ICT tools like recorders and talking keypads facilitated learning as students were able to take notes for exams, record the important parts of class lectures and make presentations of their work. Accordingly, Wajszczyk (2014) presents similar outcomes, as in the study teachers declare that ICT can improve communication and academic skills of SEN students. Moreover, Maida (2015) has found that special educators state that particular ICT tools can facilitate nonverbal students' communication, improve learning process in special classrooms and their integration demands a professional learning community setting so as to become more effective.

However, there are some practical and technical considerations that should be taken into consideration, such as support and essential time to become familiar with technologies, financial issues, demanding adoption procedure, pupils' discrepant use of technology between school and home and frustration when technical issues occur.

Parallel findings occurred in Anagnostou's (2015) study. ICT and more specifically computers are very essential and supportive to learning process, as students with learning difficulties can enhance reading and writing skills and motivation to participate in classroom according to teachers' points of view. Furthermore, computers can change teachers' role as they become coordinators and guides through learning. Lesson objectives become more understandable and knowledge can be analyzed in depth. Therefore, SEN students are encouraged to take part in learning at their own pace without being ashamed of not responding immediately.

Despite the positive results derived from the use of computers in the classroom, there are some difficulties that should be overcome, as well, such as, inadequacy in equipment, dearth of teaching material for SEN students, absence of state support and insufficient supplying of funds. Nevertheless, a significant percentage of teachers either disapprove ICT integration or they are not aware of ICT benefits on learning. In general, investments are not made in Greek schools and the educational system underperforms. Therefore, teachers' negative attitudes towards ICT have been correlated with poor design of ICT programs and defective equipment (Roussos, Tsaousis & Politis, 2000). Moreover, Marczak (2014) has found a small percentage of teachers who do not find ICT useful, as it can cause discipline issues or ruin teaching because it is an important change which might get students upset. Stress related to students' inappropriate use, such as breaking the computers, visiting inappropriate websites or minding ICT as a game, form non- technology policies in the name of safety. Cunska and Savicka (2012) also support that organizing a lesson with ICT tools requires educator's computer and technology skills and spending a lot of time to prepare. In Sulaimani's research (2010) even though teachers were willing to use technologies, their training was inadequate due to time limitation and ineffective ICT programs, resulting in not using ICT. Raman and Yamat (2014) indicate that despite the existence of ICT tools in the school, obstacles such as negative attitudes of teachers towards utilizing technologies, a lot of personal work, time restriction, teaching experience, age and lack of ICT skills prevented the educators from using ICT in their classrooms.

2. Methodology

As the aim of the current research is to investigate deep beliefs and perceptions of special educators in mainstream school in Thessaloniki towards utilizing ICT tools and their effect on developing SEN students' academic skills, the qualitative method has been chosen. In general, qualitative research aims to understand, analyse and interpret the deeper meaning of data collected and it aims to investigate a variety of aspects of a single phenomenon (Creswell, 2013; Wyse, 2011). It is mainly used by researchers exploring human habits, comprehending reasons, attitudes and motivations (Creswell, 2014). Methods of data compilation can be semi-structured or unstructured. The most common ones are focus groups, interviews and observations/participations. Consequently, the size of sample is quite small (Wyse, 2011).

Moreover, qualitative research aims at interpreting words, emotions and non-numerical traits and it cannot be analysed by mathematical techniques (Muijs, 2010). This is the main reason why qualitative method has been chosen for the current research over quantitative, which aims at impartial measuring and statistical, numerical analysis of data collection. Numerical data can be generalized to groups of people and interpret specific phenomena. The most common tool in quantitative research is the questionnaire. As quantitative research explains everything using numbers and avoids interpretations, it is considered positivistic and as data can be generalized, the size of sample is large (Muijs, 2010).

As the differences between qualitative and quantitative method are clear and the purpose of the study is to investigate special educators' beliefs on utilizing ICT tools in mainstream schools of Thessaloniki, it is clarified that qualitative method is the most suitable for the present study.

2.1 Data Collection

Semi- structured interview has been chosen as the tool for collecting data in the current research. An interview is a very common and useful tool for collecting qualitative research. It provides the researcher with extensive information and it is used for describing many aspects of the understudy topic. These aspects are not always apparent and a detailed talk with participants helps the researcher acquire and investigate every dimension of participant's words. The main feature of an interview is interaction. In this way, many other aspects can be probed and lead to an even more extensive description of the topic (Alshenqeeti, 2014). A semi-structured interview is a very effective tool because it allows the researcher to attain details, more explanatory questions can be posed and questions can be adjusted to the respondent's needs (Opdenakker, 2006).

The interviews have been conducted face to face and the time and date has been prescheduled according to the respondents' availability. The interviewees, also, consented to be interviewed at their own classrooms and, as they claimed, they felt free to participate in survey as long as interviews took place at a familiar and intimate environment. Before starting the interviews, the respondents were informed about recording their responses, the aim of the study and were provided with consent forms and information sheets. For the needs of the interviews an interview guide was used. It included 20 questions, 4 of them concern demographic data, 9 were posed to special educators who use ICT and 7 to the ones who do not use ICT. The questions were open, as they provide the participants with the freedom to convey their deep thoughts and attitudes (Turner, 2010). The main body of the researcher's interview guide has already been used in Wajszczyk's research (2014). The interview guide is not identical to Wajszczyk's (2014), as it has been adjusted to Greek reality. The main subject areas are Advantages, Types and access, Barriers and Obligation. All questions have been designed considering ethics of University of Derby (2013). No leading questions or questions that will harm the interviewees will be made. The possibility to withdraw from research is given to the participants within one week after being interviewed.

2.2 Procedure

The present research has been conducted with the contribution of 15 interviewees. The researcher contacted 5 gatekeepers of mainstream primary schools of Thessaloniki in order to get permission to carry out the interviews. The sample of the survey are 15 special educators who agreed to participate in research. Consequently, it is a non-probability one. Whilst a probability sample is considered unbiased and more representative (Etikan, Musa & Alkassim, 2016), the researcher had difficulty in enlisting all special educators in current research, as getting access to public schools is a lengthy process due to bureaucracy. As a result, the availability of special educators defined the sample of the research, which is a non-probability convenience one. A convenience sample is affordable and suitable when barriers hinder the researcher from orienting her sample, such as the difficulty in accessing a school in Greece due to bureaucracy issues. Moreover, the convenience sample was chosen for the current research, as it is no purposeful (Palinkas et al., 2013). The aim of the study focuses on exploring whether special educators integrate ICT tools in their classrooms or not; therefore, any teacher can be included in the survey.

In more details, the sample consists of 15 special educators who work at mainstream primary schools in Thessaloniki, 9 women and 6 men. Their age ranges from 26 to 53 years old. Mainly the youngest ones have extra degrees on special education and ITC, while most of the older one's lack supplement degrees. Their teaching experience varies from 1 to 33 years. All teachers were willing to take part in research. Before starting the interviews, the respondents were given consent forms and information sheets, so as they become aware of the purpose of the study and ethics of Udo. They were also informed about their answers being recorded. Even though the size of the sample can be considered small, it generates a rich amount of data (Maxwell, 2005).

After collecting data, the researcher is ready to analyze it (Bryman, 2001). All interviews were transcribed in order to find out which data is relevant. As Creswell (2014) points out, some data is irrelevant and cannot be used. The method of analyzing data that has been collected is thematic analysis. Thematic analysis is a method for analyzing, acknowledging, coordinating, delineating and debriefing patterns or themes derived from data collected (Braun & Clarke, 2006). It is used as it is an extremely supple method that admits the researcher into rich, detailed amount of data. According to Braun and Clarke (2006) and King (2004) thematic analysis is the most suitable data analysis approach to researchers who are not familiar with other types of data analysis approaches as it is easily perceived and it can be learned quickly.

There are some steps which the researcher needs to follow when using thematic analysis; familiarization with data, finding initial codes, searching for themes, reviewing themes and defining and naming themes (Lorelli et al, 2017). The researcher read thoroughly the transcribed interviews before searching for codes, as potential patterns are likely to be grasped when the researcher acquaints with all spectrum of data (Braun & Clarke, 2006). After familiarization with data, initial codes occurred, which were noted with different color and then a list of different codes came up.

Reviewing themes enables the researcher to edit potential mistakes that have been made while categorizing ideas into codes. Finally, when codes are identified, names were given to each pattern.

2.3 Pilot Study

Pilot study is an essential part of the survey, as it gives the researcher the opportunity to check the effectiveness of the methodology tools. The questions of the interview are pre-tested so as to avoid any imminent failure and ascertain that protocols are followed. The feasibility of the questions is also checked and all necessary sources for a scheduled research are defined. Moreover, pilot study affirms that data is analyzed properly and exposes any possible difficulty (Teijlingen & Hundley, 2001). Pilot study was a crucial part for the current research, as well. The researcher contacted two gatekeepers and got permission to access their schools. The gatekeepers were informed about the purpose of the study and were given information sheets and consent forms to read and sign. Three special educators agreed to participate in survey. They were also instructed about the aim of the researcher and were provided with information sheets and consent forms.

Before starting the interviews, participants were informed about recording their responses and ethics of University of Derby (2013). During the interviews, no question needed to be reformed or explained, but some back-up questions for teachers who do not ICT came up. Due to a participant's refuse for using ICT, the need to pose more identifying questions about the barriers that hinder ICT integration came up. Nevertheless, no other factor affected the initial interview guide.

2.4 Validity and Reliability

Validity and reliability of a research are important measures that need to be established. In qualitative research validity indicates whether method tools are properly designed and to what extent they can lead to valid outcomes. As qualitative research depends on researcher's personal points of view and observations validity issues might occur (Leung, 2015). According to Maxwell (2005) no specific method can ensure validity in qualitative study. The quality of a research depends on researcher's competence in overtaking any menace of validity (Creswell, 2014). The main threat of validity in the research are the inexperience of the researcher and the analysis of the transcript. A participant might easily be influenced by internal and external factors, such as the interview location, not understanding questions of the interview or even the interviewer's attitude (Wajszczyk, 2014). For that reason, the interviews took place in participants' classrooms during their free time so as to feel comfortable responding and questions are based on Wajszczyk's interview guide and have been pre-tested in pilot study. Nevertheless, the questions are not identical Wajszczyk's, as non-representative questions to Greek reality were rejected and have been replaced by others. Moreover, all questions have been chosen or designed according to ethics of University of Derby (2013).

Reliability measures to what extent a method tool can give the same outcomes in different cases under the same circumstances (Wajszczyk, 2014). The basic part of the current research that is possible to cause reliability issues is the results of the interviews,

as the main part of the acquired outcomes is based on the performed interviews and their outcomes. It is very usual when participants are asked about their perspectives and views to have different experience, which might influence their response (Wajszczyk, 2014). In order to increase the reliability of the results, the researcher will record the interviews. In this way data that will occur will be more credible, as the interviewee will not remain occupied writing down all the answers during the interview and distract the respondents or make them feel uncomfortable. Moreover, as the researcher will listen to the interviews many times, she will ensure that data can be analyzed properly, and all aspects of the conversations will have been taken into account. Consequently, as all responses will be recorded the reliability of the results increases (Anagnostou, 2015).

Furthermore, themes will emerge from the main categories defined by the initial objectives and sub-themes will occur in an inductive way. In order to ensure reliability, a second researcher will check the coding and the proposed categories derived from analysis of data, so as to achieve the objectiveness of the study.

Thematic analysis offers the researcher the possibility to output concepts and significations from data and it includes defining, exploring and charting patterns or themes (Javadi & Zarea, 2016). In thematic analysis, themes and sub-themes are formed; the more intricate the data is, the more sub-themes occur. Within each theme, some excerpts from respondents' answers are quoted where needed. The four main themes are:

1. Advantages of the use of ICT
1.1 Advantages on students
1.2 Advantages on special educators
2. Barriers that hinder ICT integration
2.1 Difficulties that students with SLD face when using ICT
3. Types of ICT used and access to ICT material
4. Obligation to use ICT

3. Results

In general, the five respondents who do not utilize ICT are aged from 46 to 53. On the contrary, the age of special educators who use ICT varies from 26 to 37 and only one respondent is 52. According to participants' demographic data, it seems that young teachers tend to be more positive towards utilizing ICT in relation to older ones. Similar findings occurred in previous studies (Giordano, 2007; Hernandez-Ramos, 2005; Jamieson-Proctor et al., 2006; Jimoyiannis & Komis, 2007; Lenhart et al., 2005; Wong & Li, 2008). Raman and Yamat (2014) declare that in the past years educational systems focused on traditional methods of teaching, which included students' exclusive learning from the textbook, memorizing information and receiving knowledge as passive learners without any kind of interaction.

Consequently, as derived from data analysis, older teachers, who are familiarized with conventional ways of teaching, stated that they feel too old and incapable of integrating ICT in teaching process. Contrarily, there has been found a positive

association between young teachers and ICT competency. Therefore, there are more chances that they integrate ICT in comparison to older ones (Baser-Gülsoy, 2011).

However, these findings diverge from Morley's (2011) and Mueller's (2008) studies, as the latter supports that older educators have been familiarized with ICT since tech-organized courses are not a recent phenomenon. Factors such as special educators' qualification on IT and gender have not been proved deterrent, since the majority of the participants (14 out of 15) have IT certifications and no significant difference between male and female teachers has been pointed. In contrast, Morley (2011) designates more frequent use of ICT by women in relation to men teachers.

The first objective of the current study is associated with the types of ICT special educators use in their classrooms. All participants' schools include computer labs, but the access to computers is limited as IT courses mainly take place in them and the number of computers is inadequate. A major difficulty that schools face is not only the disproportion between computer labs and the number of classrooms (Tziafetas et al., 2013; Wajszczyk, 2014), but the dysfunction of several computers per school, as well.

However, computers are the most preferable ICT tools and respondents who do not use ICT claimed that if they had to, they would choose to utilize computers. According to Jimoyiannis and Komis (2006) computers are the most preferable and commonly used ICT tools in mainstream schools. Other ICT tools used at mainstream schools of Thessaloniki are projectors, interactive whiteboards and teachers' personal laptops and tablets (Bougias & Dimitriadis, 2006). It has been found that all tools mentioned above are available only at one school. More technologically advanced tools that are utilized in other countries, such as joysticks, Braille printers, special keyboards and pointing systems (UNESCO, 2006) have not even been mentioned by the participants, which elicits the extent they abstain from Greek reality.

As regards specially designed software only two respondents use some. According to other participants specially designed software for students with SLD is hard to find, as Greek software is rare and most of them are not for free (Anagnostou, 2015). Therefore, they utilize online games which "*take into consideration SLD when being constructed*". Even though playing online games is beneficial for enhancing cognitive skills, sometimes they are unaffordable (Prensky, 2006) since playing for a long time entails subscription. Furthermore, five participants declared that they utilize computers in order to show videos connected to textbook's objectives, to facilitate revision via PowerPoints, to motivate reflection, to summarize the most important parts of a lesson, to use Word processor and to visit websites. Tondeur et al. (2007) report that educators utilize technologies for instructional tasks, such as finding tests online, images, activities, exercises and making presentations. Contrarily, Usluel et al. (2007) associate teachers' use of technologies with administrative aims, such as organizing teaching plans and manage pupils' grades and performance, but not for supportive purposes, such as making presentations and conduct experiments.

The second objective of the current study is correlated with the reasons why special educators do not use ICT in teaching process. Analysis of data revealed a vast number of barriers which hinder ICT integration. The most commonly mentioned factor

is the inadequacy, the absence and the dysfunction of technological equipment. Old infrastructure or inadequate equipment are major problems, which prevent educators from utilizing them (Unal & Ozturk, 2012). In Tondeur's et al. (2008) research teachers declared that even though an effort to supply one computer per ten pupils was made, ICT integration was not achieved due to the small number of computers and the lack of technical support, as update was not provided. Simply providing schools with ICT tools does not ensure ICT integration (Becker, 2000).

Another difficulty that discourages special educators to adopt ICT practices is the lack of funding and support by the state. Investments on supplying efficient equipment are usually low and allow the purchase of a small number of computers, which students have to share resulting in complicating learning process (Nam, Bahn & Lee, 2013). Lack of technical support also acts as a deterrent factor towards avoiding the use of ICT (Williams, 2005) as the fear of computers' breakdown causes stress and disappointment to teachers (Becta, 2004). Lack of infrastructure and technical support leads teachers bring their own laptops or tablets, which can be significantly tiring and increases teachers' responsibility of the devices, since ''*students do not consider their value and might break them by accident*''.

Workload and lack of time are mentioned as obstacles for avoiding the use of ICT, as well. Several educators are competent and proficient to use technologies; however, they only use them to some extent due to lack of time and workload (Ghavifekr, Kunjappan, Ramasamy & Anthony, 2016). Sicilia (2005) indicates that time limitation discourages teachers to search for websites, educational material and organize tech-based lesson plans. Moreover, current data revealed the strictness of Greek syllabus which results in remaining little time to make use of ICT. Greek state decides on using textbooks and achieving certain objectives in certain time. Therefore, educational system leaves only a little time leeway to use technologies in mainstream schools (Anagnostou, 2015; Barakos, 2008).

Moreover, all respondents who do not use technologies stated that they do not mind ICT as a necessary tool for fulfilling learning objectives. Teachers negatively disposed towards technologies usually consider them ancillary and not essential part of teaching; sometimes they tend to underestimate their value (Vourletsis & Politis, 2016). Three interviewees follow only textbooks instructions, whilst two supply students with other visual material, as they fear of computers' technical issues, such as losing file documents. According to interviewees, tasks and objectives can be accomplished through any way that the educator minds efficient. Experienced teachers are aware of methods which new graduate teachers have not meditate. Karaca (2011) reports the disproportion between educators' experience and ICT competency. It is more likely for new, constructivist teachers to use new teaching methods and take advantage of new learning tools (Hermans et al., 2008).

Age, lack of ICT skills and lack of training have been reported as obstacles to ICT integration, as well. As mentioned above, older educators do not prefer ICT tools in their teaching in comparison to young teachers. Alazam et al. (2012) have also found a significantly high correlation between young teachers and high levels of ICT skills,

resulting in using ICT tools in a higher frequency in relation to older educators. Efficient integration of technologies requires educators' essential qualification and skills (Jedeskog & Nissen, 2004). In current research, 14 participants declared that they have a certification on computer use. However, the constant development of technology makes teachers feel novice (Wood et al., 2005), low self- efficacy and confidence and prevent them from using ICT for educational purposes (Nam, Bahn & Lee, 2013). Three participants hold the State accountable for not providing any training in technologies, especially to their older colleagues. Lack of training on ICT and lack of didactic and pedagogic training in methods related to ICT use have been mentioned as prevalent barriers of ICT integration (Gomes, 2005).

In addition, it has been reported that children's proficiency in ICT use make teachers with low ICT skills feel unconfident about its use. Similar findings occurred in Anagnostou's research (2015). Teachers' fear of being discountenanced by the private tutors of their students also hinder them from using ICT. Parents hire private teachers for parallel tuition at home or at school in order to support their children overcome difficulties in learning (Anagnostou, 2015). Parallel teachers are young and as a consequence more educated on ICT, which cultivates school teachers' fear of being embarrassed for not being qualified enough.

According to data occurred from the interviews, Greek teachers are not motivated to integrate ICT as they are low-paid. ICT integration demands a lot of work and not being financially rewarded leads teachers to abstention from utilizing ICT (Habibu, Mamun & Clement, 2012). Moreover, teachers seem to take into account parents' opinion, who are not aware of new teaching methods and believe that traditional approaches are the most efficient ones. In Anagnostou's research (2015) it has been found that parents disapprove of the use of ICT tools. Therefore, school leaders sometimes advise teachers to use ICT only to some extent, in order to achieve a fruitful cooperation with students' parents.

As regards SEN students' difficulties in operating ICT tools, two respondents mentioned that students with motor difficulties might struggle with computers, as their use demands motor coordination. This statement comes in disagreement with previous studies (Chicua, Ticua & Soitua, 2014; Drigas & Ioannidou, 2013; Lidström & Hemmingsson, 2014) in which the benefits of the use of ICT on motor difficulties have been studied and analyzed. However, Wood et al. (2008) states that young students, even when not facing motor difficulties, do not obtain motor coordination needed to operate computers.

Furthermore, participants stated that students need some time to adjust to ICT environment; otherwise no development is possible to occur. Barakos (2008) reports the possibility of students minding ICT as a game and diverge from learning process. ICT integration requires a lot of time in order to be effective (Unal & Ozturk, 2012).

Other reason for not integrating ICT were related to aggressiveness and distraction display. In Fenty and McKendry (2014) teachers' restricted use of ICT was correlated to incidents of aggressiveness display, as students became more irritable when anticipating take turns on an interactive whiteboard. Goundar (2014) found that students might use

ICT tools in classroom for other reasons than learning. Students can also be easily distracted by bright colors and light of computers (Yamamoto, 2008), not participate in learning process and distract their classmates, as well (Goundar, 2014).

Isolation and losing interest of cooperating might also be provoked by extensive use of ICT according to the interviewees. However, research does not agree with the particular statement (Anagnostou, 2015; Barakos, 2008; Capacho, 2016; Jakubowski, 2014). The last barrier mentioned by a respondent is students becoming complacent about finding information, as it can be found easily and quickly, which might result in students' depriving from other kind of skills. ICT might lead children to inactiveness, introversion and incapability of using their brains (Khine & Fisher, 2003). Porter (2014) mentions that "Wikipedia syndrome'' cultivates an anticipation of quick access to knowledge and immediate answers resulting in less thinking critically.

When interviewees were asked their opinion about being obligated to use ICT in their teaching, nine of them responded positively, whilst six of them expressed opposition. As stated, each educator should decide the method via he/she will transfer knowledge. He/she needs to utilize his/her didactic method and pedagogical knowledge in order to choose the most suitable learning tools so as to achieve all learning goals (Webb, 2005). The frequency of ICT use differentiates from school to school and from educator's quality (Usluel et al., 2007). According to a two respondents, there is no proper way to meet learning objectives. Besides, it has not been proved that the use of technologies contributes to students' development and using the Internet might be a wasted attempt to evolve students' skills (Cuban, 2002). Moreover, ICT integration depends upon vast modifications of current educational system, such as holistic approach of curriculum, collaborative methods of teaching and learning by doing (Ornellas et al., 2009).

Special educators' views were also investigated as regards benefits of ICT on students with SLD and on teachers. Technologies are considered an essential part of education according to the majority of participants. The domination of technology in everyday life should expand to school communities, so as schools conform to society's needs (Maida 2015). They were also characterized pleasant and enjoyable for learning process. They provide a delightful, intimate, comprehensible and appealing environment, which facilitates students obtain knowledge easily and quickly in comparison to traditional learning. Furthermore, they facilitate cognitive development and motivate students participate in lesson (McCarrick & Xiaoming, 2007). Although three respondents declared that students make a lot of noise when using ICT as they have not interrelated learning with playing, six of them reported that ICT attracts students' attention and enhance their motivation to participate.

According to previous studies, both points of view have been supported. Yamamoto (2008) states that light and color of computers might distract students' attention, resulting in diverging from learning and attract other students' attention, as well, whilst Hennessy et al. (2005) support that ICT maintains students' interest and attracts their attention to learning process. Apparently, efficient ICT integration depends

on teacher's perspective of which ICT tools/software need to be utilized, in what degree and how they can facilitate meeting learning goals (Webb, 2005).

According to participants, students with SLD might need additional time to comprehend lesson goals and complete tasks. Computers enable them to work on their projects at their own pace without being restricted by time limitations (Omede, 2014). ICT implementation plays a profound role in advancing SEN students' inclusion since barriers in a variety of learning settings can be prevented (Abed, 2018). ICT tools help SEN students comprehend concepts of learning as they allow the access to contents that cannot be presented in alternative ways providing the potential of multimodality where needed (Atabekova, 2017). Such powerful audiovisual resources can have a positive impact on SEN students' attention, memory, comprehension and they can motivate them participate in classroom (Campigotto, McEwen & Demmans, 2013). Special educators declared that ICT can adjust learning procedure to SEN students' needs considering that knowledge is possible to be obtained through audiovisual materials promoting their inclusion as SEN students' performance does not differentiate from their typically developed counterparts. A typical instance of inclusion was described by a participant. Students facing writing difficulties can develop their writing and social skills when using ICT tools. Web offers a range of tools, such as blogs and emails (Forzani & Leu, 2012), which permit information sharing and promotes the development of students' social skills (Garrison & Vaughan, 2008). In addition, spelling mistakes can be decreased and students are released from the fear of giving wrong answers (Stravodimou, 2015). Another advantage mentioned by the respondents concerning ICT benefits on students with SLD is the promotion of collaboration and team-working. Students become independent learners and they are motivated to collaborate with their classmates in order to complete certain tasks (García- Velcarcel, Basilotta & Lopez, 2014).

Technologically organized lessons can be efficient for promoting student-centered methods, such as group-working, given that interaction is the dominant trait of both ICT strategies and team-working (Langford et al., 2016). However, three respondents supported that students' use of ICT may lead to isolation and individual work or making a lot of noise in classroom. Fisher, Lucas and Galstyan (2013) support that computers might lead to individualistic behavior since interaction with the teacher and classmates is restricted. Moreover, ICT use can cause discipline issues and ruin teaching since it is a significant change, which might get students upset (Marczak, 2014). Davidson (2011) underlines the significance of not accusing technology for ruin teaching and highlights the importance of changing infrastructure so as ICT lead to efficient outcomes. Besides that, many factors need to be taken into consideration in order to accomplish a fruitful integration of technologies.

Construction of knowledge, cognitive collision and reflection are benefits on SEN students last mentioned by the sample of the research. According to Jonassen (2000) new technologies can be used as cognitive tools contributing to construction of knowledge, as students search and find information in a variety of resources, which should be filtered according to their content, resulting in students' development of critical thinking. Furthermore, through this kind of search students come in cognitive collision as they

need to segregate useful from less useful information. Finally, they are able to reflect on the knowledge they acquired (Jonassen, 2000).

Cognitive collision and construction of knowledge can be achieved for educators, as well, through searching which material are the most suitable for their students' needs. Moreover, special educators reckon that not only do they pass knowledge on their students in a pleasant way, but they share useful resources with their colleagues, as well.

In this light, Lai (2002) supports that online forums can be utilized as tools for sharing knowledge with other educators, resulting in saving time from searching educational material. Finally, as regards benefits of ICT use on special educators, moral satisfaction was reported. Two participants recognizing the enjoyment and effectiveness ICT provides to their students are encouraged to utilize technologies as often as possible. Such positive experiences make teachers more confident and satisfied by their teaching practices and motivate them to use ICT in a higher frequency (Mueller, 2008).

At this point, it is worth mentioning that despite the variety of barriers referred by the sample, the majority utilizes ICT tools as they recognize their benefits for students with SLD and for teaching process. However, despite the positive attitude special educators have towards using technologies, the frequency of ICT use varies according to teachers' lesson plans and curriculum. As derived from data analysis, some respondents use ICT on a daily basis, while others stating positive towards technologies use them once or twice a month. An efficient integration of ICT requires educational and curriculum changes (Anagnostou, 2015).

Moreover, there are some contrasts between the answers of the teachers which are worth being referred. Eight special educators using ICT claim that ICT tools attract students' attention, which results in maintenance of silence during the lesson, whilst three respondents who do not use ICT stated that students mind ICT as a game and make a lot of noise while learning, or they might not even get involved in learning, as playing is not ''*conceptually connected*'' with learning. Learning by doing and through playing is regarded effective by all the positively disposed towards ICT and one who is negative, while two more negatively disposed support that ICT cannot be a part of learning process as students are not concerned about learning while playing. One teacher who does not use ICT and one who uses declared that ICT facilitates team working, while two who use ICT reported as a disadvantage that students might be isolated and avoid cooperation and have a conflict about the responsibilities each student should take in team. Moreover, participants who are negatively disposed towards ICT reported confined advantages of ICT, such as making learning process interesting, entertaining, passing knowledge on students and teachers' personal development. Only one respondent stated unaware of ICT benefits due to his highly restricted experience.

3.1 Limitations

The sample of the study comes from the area of Thessaloniki and, as a result, cannot be representative. Special educators working at provincial schools or at schools in other towns might have different attitudes on using ICT, as other factors are possible to influence ICT integration. A study cross Asia revealed that urban schools are more likely

to integrate ICT in relation to rural and remote areas (UNESCO, 2014). Differences from one school to another can be held accountable for the frequency and the quality of ICT use (Usluel et al., 2007). Moreover, the confined number of participants cannot lead to generalization of data. Even though a wide range of special educators' beliefs emerged, only numerical data derived from a large size of sample can be representative and generalized (Muijs, 2010). Therefore, the present study only reveals special educators' views on utilizing ICT in mainstream schools of Thessaloniki.

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